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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/650,654	08/28/2003	Richard L. Wilson	03198-PA	7277

7590

07/22/2005

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EXAMINER

WITHERSPOON, SIKARL A

ART UNIT

PAPER NUMBER

1621

DATE MAILED: 07/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/650,654

Applicant(s)

WILSON, RICHARD L.

Examiner

Sikarl A. Witherspoon

Art Unit

1621

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 May 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 6-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 6-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The examiner has considered applicants' amendment filed May 4, 2005 and the arguments therein. In light of said amendment, the examiner has withdrawn the rejection of record under 35 U.S.C. 102(b) and the double patenting rejection. The rejection under 35 U.S.C. 103 has been maintained and will be repeated herein; applicants' amendment has however necessitated the following new obviousness-type double patenting rejection and rejection under 35 U.S.C. 103.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 9-14 and 18-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wilson et al (US 5,792,893).

Wilson et al teach a process for producing 1,1,1,3,3,3-hexachloropropane by reacting tetrachloromethane (carbon tetrachloride) with 1,1-dichloroethene in the presence of a catalyst comprising copper, and a solvent selected from a C3 to C5 alkanenitrile (abstract). The catalyst is either cuprous chloride or cupric chloride, and the solvent may be propanenitrile, butanenitrile, pentanenitrile, or 2-methylpropanenitrile or 3-methoxypropanenitrile (col. 3, lines 24-40). The process may be conducted in the

Art Unit: 1621

batch, semi-batch, or continuous mode. Column 4, line 50 to column 5, line 53 discloses the separation and purification of 1,1,1,3,3,3-hexachloropropane.

The difference between Wilson et al and the instant claims, as amended, is that applicants allege that Wilson et al describes a *batch* process, while the instant claims are drawn to a *continuous* process for making a haloalkane.

Assuming that Wilson et al does indeed teach a batch process, the examiner purports that such a difference does not represent a patentable distinction. It has long been held that batch and continuous processes are not patentably distinct, absent a showing of unexpected results. *In re Dilnot*, 319 F.2d 188, USPQ 248 (CCPA, 1963).

Claims 6-8, 15-17, and 24-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Asscher et al (US 3,651,019) and Wilson et al (US 5,792,893) in combination.

The instant claims, as amended, are drawn to a *continuous* process for preparing 1,1,1,3-tetrachloropropane by contacting carbon tetrachloride with ethane in the presence of copper catalyst components, and n-butyronitrile co-catalyst, wherein the reactor operates at a temperature of 100 to 180° C and a pressure of 80-400 psig for 0.20 to 200 hours, with a butyronitrile concentration of 10-50 wt %; distilling the reaction mixture, separating the copper catalyst and purifying the liquid to obtain purified 1,1,1,3-tetrachloropropane; dissolving the precipitated copper catalyst in the recovered butyronitrile co-catalyst, and returning a portion of the catalyst solution to the reactor.

Asscher et al teaches a process for the production of adducts of carbon tetrachloride (or chloroform) with olefinically unsaturated compounds at temperatures

Art Unit: 1621

from 20 to 300° C; the catalyst comprises a dissolved copper or iron compound. The olefinically unsaturated reactant is selected from compounds such as ethylene, propylene, and vinyl chloride (col. 5, lines 58-70). Cupric chloride or cuprous chloride may be employed as catalyst. Solvents, such as acetonitrile may be employed to directly dissolve the metal compound. Example 2 teaches the reaction of carbon tetrachloride and ethylene to produce 1,1,1,3-tetrachloroethane. The reaction is conducted for 12 hours at about 100° C, and a pressure in the range of 600 to 1200 psi, with distillation of solvent and residual product reaching a final temperature of 190° C (col. 9, line 57 to col. 10, line 6).

As stated above, Wilson et al teach a process for producing 1,1,1,3,3,3-hexachloropropane by reacting tetrachloromethane (carbon tetrachloride) with 1,1-dichloroethene in the presence of a catalyst comprising copper, and a solvent selected from a C3 to C5 alkanenitrile (abstract). The catalyst is either cuprous chloride or cupric chloride, and the solvent may be propanenitrile, butanenitrile, pentanenitrile, or 2-methylpropanenitrile or 3-methoxypropanenitrile (col. 3, lines 24-40). The process may be conducted in the batch, semi-batch, or continuous mode. Column 4, line 50 to column 5, line 53 discloses the separation and purification of 1,1,1,3,3,3-hexachloropropane.

The differences between Asscher et al and the instant invention is that Asscher et al do not teach the separation and purification steps claimed in the present invention, and do not teach the use of butyronitrile. However, Wilson et al teach steps for the separation and purification of haloalkanes formed from carbon tetrachloride and an

Art Unit: 1621

olefinic compound, and Wilson et al also teach the use of alkanenitriles such as butanenitrile.

It would have been obvious to a person of ordinary skill in the art, at the time the present invention was made to employ the separation and purification steps taught by Wilson et al, in the process taught by Asscher et al. One of ordinary skill would have been motivated to so combine the reference teachings by the desire to separate the catalyst and solvent from the desired haloalkane product, in order to be able to recycle said catalyst and solvent to the reactor, in order to achieve a more sufficient process, and obtain maximum recovery of the haloalkane product.

It also would have been obvious to substitute another organonitrile solvent, such as butanenitrile, as taught by Wilson et al, for the acetonitrile solvent that may be employed in the process taught by Asscher et al, since Wilson et al teach that use of solvents such as acetonitrile result in the formation of hard solid chunks, while superior results can be obtained using a C3 to C5 alkanenitrile, that when mixed with the copper catalyst, form homogeneous solutions or fine slurries, that are especially easy to transfer to the reactor (Wilson et al, col. 2, lines 45-55).

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

Art Unit: 1621

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 9-14 and 18-23 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-6, 18, and 20-32 of U.S. Patent No. 5,792,893. Although the conflicting claims are not identical, they are not patentably distinct from each other because the difference between Wilson et al and the instant claims is one of a batch (Wilson et al) versus a continuous process (instant claims). However, it has long been held that batch and continuous processes are not patentably distinct, absent a showing of unexpected results (see *In re Dilnot*, cited above).

Response to Arguments

Applicant's arguments filed May 4, 2005 have been fully considered but they are not persuasive. With regard to the rejection of Wilson et al alone, applicants argue that Wilson et al is drawn to a batch process, while the instant claims are drawn to a continuous process. Applicants also argue that Wilson et al do not teach steps e) and F) of instant claim 9, does not teach the step of claim 14, wherein the catalyst recovery unit comprises a "distillation column located above a hydrocyclone unit...", and does not teach the limitation of claim 18, wherein co-catalyst components are joined and returned to the reactor. Applicants' arguments are directed to the 102(b) rejection made in the

Art Unit: 1621

previous office action, but still apply to the new 103 rejection that has been made, and as such, the examiner has responded accordingly.

First, as stated above in the 103 rejection, batch and continuous processes are not patentably distinct, and as such, the process taught by Wilson et al renders the instant continuous process obvious. With regard to the other alleged differences, or rather steps that applicants' allege are not taught by Wilson et al, the examiner would like to direct applicants' attention to column 4, line 50 to column 5, line 53 of Wilson et al. There Wilson et al teach the steps/limitations that applicants believe not to be taught by the reference, such as adding the solvent to dissolve the copper catalyst such that the solvent and redissolved catalyst can be recycled to the reactor, and employing a solids separation device, i.e., a hydrocyclone, located below a distillation column, to remove solids that have settled out of the liquid phase (see specifically col. 5, lines 17-35, along with figure 1).

Since Wilson et al do in fact teach the limitation that applicants' alleged were not present in the reference, the examiner asserts that the rejection of record over Wilson et al alone is proper.

With regard to the rejection of record over Asscher et al and Wilson et al in combination, applicants argue that Asscher et al cannot be properly combined with Wilson et al because the final products being prepared by Asscher and Wilson are actually different chemical entities. Applicants further argue that the instant claims

Art Unit: 1621

prescribe a different pressure than Asscher, and neither reference teaches a continuous process.

The examiner believes that previous remarks regarding batch and continuous processes are sufficient to rebut applicants' arguments in that regard. The examiner respectfully disagrees with applicants' assertion that since Asscher and Wilson teach the preparation of distinct chemical entities, i.e., different compounds, and that such compounds are non-analogous compounds, and therefore one would not look to Wilson to cure the deficiency of Asscher. The examiner purports that the fact that Wilson and Asscher prepare different compounds is immaterial, and further, the examiner does not consider the compound prepared by the references to be non-analogous. Wilson teaches the preparation of hexachloropropane and octachloropentane, while Asscher teaches the preparation of tetrachloropropane. All of the compounds produced by the references in question belong to a specific class of compounds, namely, hydrochlorocarbons (HCCs). The examiner purports that absent a teaching or showing of the contrary, it would be reasonable for a person of ordinary skill in the art to conclude that a separation technique that is useful for separating one hydrochlorocarbon, specifically from a reaction effluent where the same catalyst or same type of catalyst is present, could be applied to the separation of a similar hydrochlorocarbon. The examiner therefore asserts that the combination of Asscher et al and Wilson et al as per the rejection of record is proper.

The reaction pressure taught by Asscher et al is found immaterial, since neither Asscher et al nor the instant claims purport any criticality to the reaction pressure

Art Unit: 1621

employed in their respective processes. Absent a showing of unexpected results, a person of ordinary skill in the would be motivated to employ a pressure above or below that which is taught by Asscher et al in order to arrive at a reaction pressure that would afford optimal conversion to the desired haloalkane.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

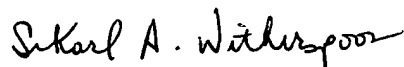
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sikarl A. Witherspoon whose telephone number is 571-272-0649. The examiner can normally be reached on M-F 8:30-6:30.

Art Unit: 1621

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Johann Richter can be reached on 571-272-0646. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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